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AN ASSESSMENT OF EFFECTS OF JOB CHARACTERISTICS MODEL OF JOB DESIGN ON EMPLOYEE INNOVATIVENESS: THE STUDY ON SELECTED ETHIOPIAN MANUFACTURING COMPANIES

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ABSTRACT

Employees should be creative and innovative enough at their workplace for the company to cope up with everlasting technological changes that arise from competitors. Job Design theories identified several tools used to enhance employees' creativity and innovativeness at the workplace. One of the powerful job design models that affect employee innovative work behavior is Job Characteristics Model (JCM)(Hackman & Oldham, 1976; Holman et al. (2011)). This study isto investigate the effects of JCM on employee innovativeness. Using stratified simple random sampling, 456 sample employees were selected from Steel, Garment, and leather industries in Ethiopia. Confirmatory Factor Analysis (CFA) was conducted to validate the model fit using Amos 24. Results revealed that, except task identity, the four job characteristics dimensions (skill variety, task significance, autonomy, and feedback) have a significant positive effect on the employee innovativeness with a different magnitude. Feedback and Skill Variety wasthe most important influencer of innovativeness. Regarding Critical Psychological State, only Knowledge of the Work Result has the mediating effect, but negatively. Experienced Meaningfulness and Experienced Responsibility were not mediate the respective job characteristics- innovativeness relationship. The study also found that there is a significant difference in employee innovativeness inthe private and public sectors.The study addressed only three manufacturing sectors namely steel, garment, and leather. Hence, future studies should be directed to investigate others manufacturing sectors to generalize the effect of Job Characteristics on innovativeness.

KEYWORDS: *Autonomy, Feedback, Innovativeness, Skill Variety, Task Identity, Task Significance*

INTRODUCTION

Employee innovativeness is the result of several interrelated behavioral tasks such as idea generation, idea promotion, and idea realization which Janssen called *ideation leadership*(Janssen, 2000). Janssen states proper innovativeness should result in benefiting both organizational profit and the job holder's psychological well-being through the appropriate balance between perceived job demands and worker's resources that can increase job satisfaction. Innovativeness, according to de Jong and Den Hartog (2007) is categorized into two major parts i.e Idea initiation and Idea implementation. Furthermore,Holman et al. (2011) and Janssen (2000), stated that employee innovativeness is reflected through three individual-level processes by which new ideas are *generated, promoted, and implemented.* Of course, Holman's et al. idea

generation and idea promotion innovation stages appear converged into single de Jong & Den Hartog idea initiation. Idea initiation is the primery step for innovation because innovativeness requires creativity. Creativity however is not a prerequisite for innovation to happen though it requires the ability and willingness of individuals to be innovative (Huhtala & Parzefall, 2007).

Management, technology, and marketing and psychology, fieldsviewed the concept of innovativeness differently(Anwar, Maludin, & Chong, 2020). The intent of this study however is to focus on innovation on individuals' creativity level. So, the study is conducted in the conviction that also stated byDe Winne and Sels (2010) knowledge and creativity emanate from and are stored within individuals in the organizations. HRM, therefore, plays a crucial role in facilitating the organization's work setup for innovativeness. Successful innovation will be achieved when the innovation is initiated and implemented by the employee themselves. The idea of employee-initiated innovation was well addressed by Parjanen, Saunila, Kallio, and Harmaakorpi (2020) as Employee-Driven Innovation (EDI) refer to the generation and implementation of new ideas, products, and processes originating from an employee or the group of employees who are not assigned to this task. Employee-driven innovation can be enhanced by providing an adequate variety of tasks, autonomy at work, feedback for the result of their work, and so on to employees. This is factual because elements of innovation such as idea generation are originating from the employee job holder as they perform their task than managers and supervisors.

Jensen, Johnson, Lorenz, and Lundvall (2007)provided two basic modes of innovations, one is the Science, Technology, and Innovation (STI) mode which is based on the assumption innovation is achieved by the acquisition of codified scientific and technical knowledge and the second one is Doing, Using and Interacting (DUI) mode, which is based on the casual process of learning and acquiring innovation knowledge through experience.The motive of this study is to stimulate employee innovativeness through the casual process of learning that is DUI. Because one of the sources of innovation capabilities is using employees as sources for innovations through task motivation, empowerment, creative thinking (Kallio, Kujansivu, & Parjanen, 2012). Task motivation and employee empowerment are the basic philosophy of job design using the job characteristics model.

Green (2020)argues that innovation can happen in any of the three forms first, Product Innovation is the creation or upgrading of an existing product or service, this type of innovation is the common practice which most literature argues about. Second, Process Innovation this form of innovation focuses on finding a better way of products/services production process. Third,Administrative Innovation works to find a new or improved way of management-oriented processes such as structure, human resources management, and accounting systems.

Another interesting notion of innovation, first introduced by Chesbrough (2003) is Open Innovation.Open innovation is a knowledge paradigm that is based on the free inflows and outflows of new knowledge which result in employee creativity and innovation in the firms (Yun, Park, Yang, & Jung, 2016) this ispossible through sufficientautonomyand access tofeedback from the job and from the others employees have at work (Hackman & Oldham, 1976).For this reason, open innovation is related to the role of employee characteristics with respect to firm-level openness(Bogers, Foss, & Lyngsie, 2018). Therefore, the concept of open innovation is also somehow similar to the job characteristics model's dimension relationship with innovativeness.

Employee internally initiated innovativeness is essential for sustainable innovation, as the golden sayings say ''if an egg is broken by external force life ends if an egg is broken from inside life begin''. In this context, breaking or innovationfrom within the organization will well establish the beginning of a long-lasting competitive advantage for the

organization (Amabile, Conti, Coon, Lazenby, & Herron, 1996). The purpose of this study is therefore to determine the effects of job characteristics dimensions on employee innovativeness in Ethiopian manufacturing industries. Specifically, the study was designed to:

- Examine the effect of the five core job characteristics dimension on the employee innovativeness.

- Investigate whether employee innovativeness is different between the industry ownership form

LITERATURE REVIEW

Job Characteristics and Employee Innovativeness

The disagreement observed in literature of job design characteristics and innovative workbehavior relationship, an issue of person-job fit, is an indication that the subject is understudied field (Cerne, Hernaus, & Skerlavaj, 2017). Person–job fit issue is best explained by Hackman and Oldham's job characteristics model which identified five important core job dimensions that initiate employees toward positive results. The five core job dimensions are task variety, task significance, task identity, autonomy, and feedback. The first three dimensions (task variety, task significance, task identity) enrich the job horizontally and make the job meaningful for the job holder. Enriched jobs make jobholders flexible in the ways they perform their job as a result energize them to be creative and innovative at their work (Coelho & Augusto, 2010)**.**Coelho & Augusto further suggested that each job characteristic influencescreativity through different mechanisms such as the intrinsic motivation rationale association with job characteristics consequences.Job characteristics model three basic structures, first is the five core job characteristics (task identity, task significance, skill variety, feedback, and autonomy) act as a device for the motivational enrichment of jobs(Hackman & Oldham, 1976; Wegman, Hoffman, Carter, Twenge, & Guenole, 2016) and if these five job dimensions designed in a way they provide sound job complexity, such contexts pave the way for employee creativity (Anderson, Poto nik, & Zhou, 2014). Second, is the critical psychological states (i.e. experienced meaningfulness, experienced responsibility, and knowledge of the result) were enhance the operation of core job dimension on outcome variables (Hussein, 2017; Österberg & Rydstedt, 2018). The third component is outcome variables such as employee satisfaction, internal work motivation, low absenteeism, innovativeness, and so on.In this study, we try to investigate the two job characteristics components (the Job dimensions and Psychological state) relationship effects on employee innovativeness.Coelho and Augusto (2010)further added that creativity in the organization is affected by the interaction of the three job characteristics components with each other. Therefore, in this study, the researchers will explore the interrelationship of these components in developing suitable conditions for creativity and innovativeness in a manufacturing organization setting. To achieve this the following conceptual framework and hypothesis were developed.
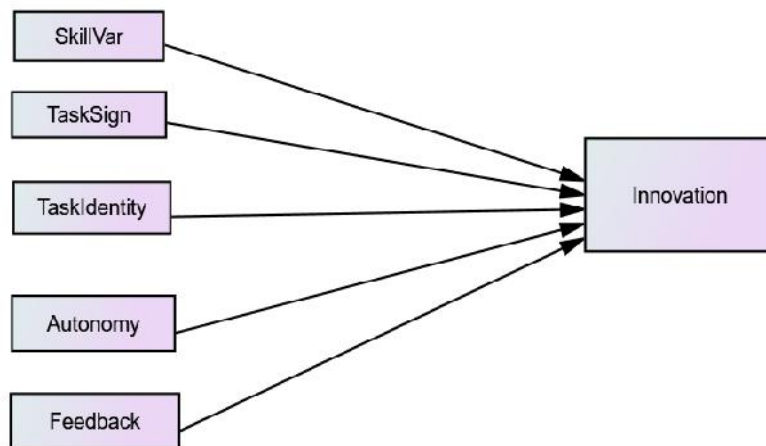
**Figure 1: Conceptual Model of the Study Developed from Hackman and
Oldham, 1976.**

From the empirical review and the conceptual model, there is a consensus that the core job characteristic has a relationship with employee work outcomes. Employee innovativeness is among the expected outcome of employee work. Therefore, in this study, we hypothesized that:

Hypothesis 1: The job Characteristics dimensions have a significant relation with employee innovativeness.

Skill Variety and Innovativeness

Task variety is the number of different tasks which a job holder performs to accomplish his/her dutiesin a generalproduction system(Morgeson & Humphrey, 2006). This means that if an employee performs a wider range of the task, it is more likely that this employee inculcates number skills that makes him philosophize over his job and create new methods and innovate products through the period of time. Montani, Odoardi, and Battistelli (2014)alsosuggested that when the breadth of job tasks is high, employees can further develop greater confidence in their ability to meet a wide range of outcomes beyond basic technical goals (thus including change-oriented goals). Accordingly, task variety would play a key role in enhancing positive feasibilityexpectations for change-oriented goals which positively affect innovative behavior.A job that provides more opportunities to learn and use a variety of skills for the job holder, will also tend to allowthe job holder to practice those skills for creativity and innovativeness (Anderson et al., 2014). Moreover, if employee equipped with adequate skill variety it reduces the time and moral cost of employee searching for information from others about the particular skill needed for creativity this enhance employee innovativeness (Hessels, Brixy, Naudé, & Gries, 2014). The moral cost of the information search is the subservience feeling information seekers develop when they search for information frequently from others and this hinders employees' innovative behavior. To some extent contrary to these, DeVaro, Li, and Brookshire (2007) findings of their research results show that the effect of task variety is stronger for the performance-related outcomes than for employee internal work motivation. The other study conducted on 230 managers and supervisors of 23 of manufacturing companies in Port Harcourt, Nigeria by Green (2020) revealed that skill variety has a significant relationship to innovation in manufacturing companies. Having this empirical evidences in different organizational setting the researcher hypothesized that:

Hypothesis 1: Skill Variety has a significant relation with employee innovativeness.

Task Significance and Innovativeness

If the job has high task significance, employees recognize that the task has a greater impact on them as well as other people this can more motivate employees to perform the task with passion (Suseno, Standing, Gengatharen, & Nguyen, 2019). In other words, when the job that is undertaken affects the health or happiness of other people, employees will care more about that job, and the job is said to be significant to the job holder. Significance thus increases intrinsic motivation and, therefore, according to the componential model of creativity, this drives innovative behavior (Coelho & Augusto, 2010).Yet, Coelho & Augusto's study findings explain that task significance is not related to creativity. They justified the insignificance of task significance creativity relationship in that strong relationship between others job characteristics and intrinsic motivationsuppressed the importance of task significance to generate creativity.However, the study by Yang and Cho (2015)was found thattask significance had the most important positive effect on innovative work behaviors among other job characteristics dimensions. The study by (Khayat & Gheitani, 2015; Suseno et al., 2019) also supports the positive effect of task significance on innovativeness. Having these empirical study frameworks as basics, the researcherestablishedthe following hypothesis.

Hypothesis, H2: Task significance has a significant relation with employee innovativeness.

Task Identity and Innovativeness

A well-designed job with adequate task identity creates a working environment by which employees understand the whole work process or whole groups of interconnected tasks so that employees can identify their role in that broader context (erne, Hernaus, Dysvik, & Škerlavaj, 2017). erne et al. added that among core job characteristics dimension task identity is one of the less explored areas of study. However, like skill variety and task significance, task identity also enhances the job holder's feeling that the job is meaningful and worthwhile, and as a result, increases intrinsic motivation and, in turn, nurtures employee creativity (Coelho & Augusto, 2010). If employees do not provided with sufficient identity, they might not have a complete picture of the job associate themselves to the unit of production this diminishes their sense of accomplishment and meaningfulness at the workplace (Cerne et al., 2017). The lack of accomplishment and meaningfulness at the workplace impede the employee's internal work motivation which in turn negatively affects employee creativity and innovativeness.

Task identity as an entire and identifiable piece of work (Suseno et al., 2019) tends the job holders to identify themselves with that job and take it as their identity which makes such employees work towards continuous improvement of the job they identified with so this, in turn, will promote positive and significant effectson organizational learning (Khayat & Gheitani, 2015).To this end, the following hypothesis is formulated to test the above empirical pieces of evidence.

Hypothesis, H3: Task Identity has a significant relation with employee innovativeness.

Autonomy and Innovativeness

Autonomy is the decision-making and scheduling freedom an employee has to exercise over the job he/she holds and performs. Empirical studies provided supportive evidence that there is a positive relationship between autonomy and innovation (Parzefall, Seeck, & Leppänen, 2008).

An adequate amount of studies were found that creativity and innovativeness are enhanced when employees in a team or individual have adequate autonomy and control over their day-to-day activities(Amabile et al., 1996). However,

Coelho & Augusto conducted a study to test a model with 460 employees in the service organization setting and the results indicated that autonomy has the lowest main effect compared to the remaining effects of variety, identity, and feedback (Coelho & Augusto, 2010).They offered two possible justifications for this. One is that this small effect is caused by the presence of autonomy in several interactions. The other is that quoted Bowen and Lawler (1992), ''different people may react differently to autonomy, thus reducing the explanatory power of the variable.''

The level of autonomy of an employee determines personal control over resources allocated to him/her. Therefore, he/she can determine how to utilize resources in achieving his/her job. This autonomy provides scope for creativity and innovativeness at the workplace. A positive relationship between autonomy and innovation is also supported by empirical evidence (Parzefall et al., 2008). Autonomy also operates by providing wider scopes for an employee to have control over the job that enhancing his/her responsibility which might induce them to set innovation-oriented goals to meet personal responsibility fetched from autonomy (Wojtczuk-Turek, 2014). Moreover, autonomy provides freedom for employees to think and generate new ideas and encourages them to implement the idea (Suseno et al., 2019). Note that an employee can be gifted creative, but creativity does not always lead to innovation unless the employee is supported by autonomy to think freely to able and willing to be innovative (Huhtala & Parzefall, 2007). HR managers, however, should recall that proper autonomy should be provided to the proper worker because studies for example (Yang & Cho, 2015) reveal that autonomy did not always have significant effects on innovative work behavior for the reseason that autonomy given to those with relatively low capabilities might cause a burden than bringing a positive impact on employee innovativeness. This is also evidenced by research results of Coelho and Augusto (2010) that show autonomy has the lowest effect compared to the remaining job characteristics (i.e. variety, identity, and feedback) effects.

Therefore, it is generally presumed that employee autonomy is positively related to job satisfaction and internal work motivation which can result in productivity, product quality, and most importantly relates to employee creativity and innovativeness (Burcharth, Præst Knudsen, & Søndergaard, 2017; DeVaro et al., 2007). Hence, the following hypothesis was developed to test the implication of autonomy on the innovativeness of manufacturing industries in a developing country like Ethiopia.

Hypothesis, H4: Task Identity has a significant relation with employee innovativeness.

Feedback and Innovativeness

Feedback is one of the mechanisms by which employees obtain knowledge and learn about the result of their output. Employees obtain feedback from different sources such as supervisors or managers, coworkers, clients or customers, self-generated, and experts (Bak, 2020). Positive feedback can enhance morale and can be a source of internal motivation and satisfaction for employees which makes them work creatively and innovatively. Fischer and Rohde (2013)argued that feedback enhances the manager-employee relationship that can help bolster employee creativity. Fischer and Rohde further discussed that creative ideas submitted by the employee to supervisors or managers should be properly handled.For example, If the idea was rejected, while the actual rejection of the idea was not an issue, the lack of reasoning behind the rejection (i.e. feedback) was problematic.

Nowadays, companies have a design room where new product ideas would be checked and tested.

further feedback should beprovided to the employee about new ideas in relation to customers' needs and desire to improve employees' knowledge about the customer and desired product. Such additional feedback frequently led the

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employee to seek new pieces of ideas and this will develop employee innovativeness at the workplace(Coelho & Augusto, 2010). Clarifying goals and roles, providing work-relevant information, and communicating the organization's values to the employee through supervisor feedback positively affect innovative work behavior (Bak, 2020).

In the Job characteristics model, feedback is considered to be one of the important tools that supervisor has to provide to employees regularly to improve their innovative behavior. Many research results such as (Coelho & Augusto, 2010; Su, Lin, & Ding, 2019; Suseno et al., 2019) confers that feedback is positively related to employee innovative behavior. Hence, to test this the following hypothesis is initiated.

Hypothesis, H5: Feedback has a significant relation with employee innovativeness

Industry Ownership and Employee Innovativeness

Industry ownership in this study was divided into private and public forms. Empirical evidence indicates that ownership form acts differently on employee innovativeness. Private sectors are more promote employee innovativeness than the private mainly because of their flexibility in responding to customer need and market change (Halvorsen, Hauknes, Miles, & Røste, 2005; West & Lu, 2009). Most of the time privately owned sectors have diversified ownership while public sectors are concentrated by government ownership. The innovativeness advantage of the private-owned sector is that they have diversified knowledge and skills coming from diversified ownership. Empirical evidence shows that ownership type diversity is an important factor in affecting industries' innovativeness performance (Chen, Li, Shapiro, & Zhang, 2013).

On contrary, Bysted and Hansen (2013) claim that, though there are major differences in employee innovative behavior between different industries and job types, their study found that public industries were not less innovative than private. Though evidences show that public sectors innovativeness is less as compared with private, public sectors innovativeness is likely to become a way of providing radical solutions particularly in the time of general business and economic crisis(Cankar, 2013). Based on those arguments, we hypothesized that:

Hypothesis, H6: Employee innovativeness is significantly different between private and public industries.

METHODS

This study was initiated to investigate the overall job design (i.e. JCM) effects on employee innovativeness in the manufacturing industry in Ethiopia. To achieve these, researchers implemented correlation analysis, multiple regression, and independent-sample t-test.

Material and Sampling Procedure

The population of the study is selected manufacturing companies in Ethiopia. The majority of Ethiopian manufacturing companies are concentrated in major cities of the country. Data were collected from Leather, Garment, and Steel industries located in major cities. The target population was grouped into strata based on companies' geographic location and departments from which the sample of the study has been collected.

Primary data were collected through the Job Diagnostic Survey questionnaire were adopted from Morgeson and Humphrey (2006) Work Design Questionnaire (WDQ). The WDQ contains 27 items to measure job dimensions variables. 14 items measures of the Critical Psychological State questionnaire and 11 items (5 general satisfactions and 6 Internal Work Satisfaction) were used to measure outcome variables. The Innovativeness questionnaire, which contains 9 items,

was adopted from Holman et al. (2011). All constructswere assessed using 5 scales Likert scale questionnaire.

Data were distributed to 480 employees of Steel, Garment, and Leather industries in Ethiopia, and 456 responses have obtained after 24 non-return and inconsistent responses were screened out using multiple imputation techniques on SPSS version 26.

Reliability and Validity

Reliability to test the internal consistency of the instrument in scale items, Cronbach's alpha, andComposite Reliabilitywere calculated using SPSS version 26 and f Amos 24. Convergent Validity Average Variance Extracted (AVE), Convergent Reliability (CR)are calculated to measure construct validity then, AVE and CR values were calculated using Amos 24 during CFA see table 1.Discriminant Validity wasobtained from the Master Validity result using Amos plugins developed by Gaskin, J., James, M., and Lim, J. (2019)

RESULTS

Respondent's Profile

The total of 456 participants in this study composes of 253 (55.5 %) males, 203 (44.5 %) females, with a mean age of 86 % of respondents' age was below 38 years. The study companies include Steel 194 (42.5 %), Garment 148 (32.5 %), and Leather 114 (25 %). Respondents are also from Private 284 (62.3) and public 172 (37.7 %) sector enterprises.

Assessment of Measurements Model

Preliminary model fit results such as Reliability, Convergent Validity, and Discriminant Validity has been obtained using Amos 24 and presented.

Reliability and Validity

Reliabilityaccording to Hair, Risher, Sarstedt, and Ringle (2019)Composite reliability, CR sometimes called construct reliabilityare a prominent measure of internal consistency in scale items. In this study, the Cronbach's alpha values range from 0.71 to 0.86 and all CR are greater than 0.7 hence, results confirm that all constructs have good internal consistency see table 1 as per Hair et al. (2019) threshold (i.e.   =.7 to 0.9 and CR > 0.7).

Convergent Validity Average Variance Extracted (AVE), Convergent Reliability (CR) are contemporary tools to measure construct validity. Then, AVE and CR values were calculated from CFA Amos and all constructs' convergent validity are above the threshold level specified by (Hair et al., 2019) moreover, all CR > 0.7 and all CRs are more than the corresponding AVE see table1.

Discriminant Validity the Master Validity result from Amos plugins developed by Gaskin, J., James, M., and Lim, J. (2019) shows all upper diagonal values are more than the correlation values along corresponding columns (Hair et al., 2019) see table 5 Appendix. The HTMT values were also less than 0.85 (see appendix 1). Furthermore, the largest correlation value among constructs is 0.614 all others correlation between constructs are less than 0.614 which means that there is no strong correlation between constructs this indication no discriminant validity issue. Thus, the models were all distinctive from each other, and no discriminant validity concern.

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Multi Collinearity

The independent variables' VIF, Tolerance, and Eigenvalue are tested to check multicollinearity problems on SPSS 26. All VIF values were less than 5 Hair et al. (2019) threshold and tolerance are more than 0.2 and Eigenvalue are between 0.02 and 0.5 and therefore no multicollinearity issue is observed in the model.

Table 1: Factor Loading and Convergent Validity Result

Construct	Items	Loadings	Cronbach's Alpha ( )	Composite Reliability (CR)	Average variance extracted (AVE)
Skill Variety	Sk1	0.653			
	Sk2	0.776			
	Sk3	0.742			
	Sk4	0.734	0.798	0.818	0.53
Task Significance	Ts1	0.528			
	Ts2	0.787			
	Ts3	0.807	0.738	0.757	0.517
Task Identity	Ti1	0.628			
	Ti2	0.731			
	Ti3	0.774	0.725	0.755	0.508
Autonomy	Au1	0.792			
	Au2	0.798			
	Au3	0.684			
	Au4	0.533	0.743	0.799	0.504
Feed Back	FB1	0.624			
	FB2	0.783			
	FB3	0.818	0.784	0.788	0.557
Employee Innovativeness	Inno1	0.580			
ig3	Inno2	0.795			
ip1	Inno3	0.809			
ip2	Inno4	0.745			
iim2	Inno5	0.601			
iim3	Inno6	0.606	0.856	0.857	0.503

Model Fit and Factor Loading (CFA)

Several model fit indices were examined in Amos CFA and its results shows that model fit measures such as normed chi-square ((2)/df = 1.738), RMSEA = 0.04, TLI = 0.887, CFI = 0.956, GFI = 0.925, and AGFI = 0.904 and SRMR = 0.047 all fit indices indicate good fit according to Hu and Bentler (1999) model fit index threshold. Having verified

model fit, the results show that most of the factor loadings in the model have been higher than 0.7 with few exceptions of loading less than 0.7, see table 1. The exception is taken into account as Hair et al. (2019) stated that loading greater than 0.5 is relevant if indicators appear with a significant weight.

Correlation Analysis

The correlation result in table 2 reveals that there were strong correlations among job characteristicsandemployee Innovativeness (r > 0.5) except correlation between task significane and innovativeness (i.e.r = 0.328, sig at P = 0.01).This is an indication that job characteristics are the determinant of employee innovativeness. The correlation among job characteristics dimensions was all below 0.6 that indicates no discriminant validity issue. However, the correlation between task identity and task significance wasnot significant(i.e. r = 0.082, P > 0.05).

<p style="text-align:center">Table 2: Correlations Analysis</p>

	Mean	**SD**	**SV**	**TS**	**TI**	**Au**	**FB**
SV	3.13	0.691					
TS	1.69	0.632	.117*				
TI	2.94	0.631	.594**	0.082			
Au	3.89	0.928	.599**	.229**	.650**		
FB	3.83	0.917	.371**	.109*	.713**	.528**	
Inno	2.46	0.529	.553**	.328**	.562**	.598**	.568**

Significance of Correlations: * p < 0.050 (2-tailed)
  ** p < 0.010 (2-tailed)
SV- Skill Variety, TS- Task Significance, TI- Task Identity, Au- Autonomy, FB- FeedBack

The Relationship between Job Characteristics and Innovativeness

In this section, the relationship between the dependent, and the outcome variable (i.e. Employee innovativeness) was analyzed in three parts. Most empirical studies such as Coelho and Augusto (2010); Österberg and Rydstedt (2018) provided evidence that there are significant relationships between job characteristics and employee innovativeness. These studies have been done in developed countries' organizational settings. The current study, however, conducted hypothesized to investigate whether these relationship works in the same way as it work in developed countries. To this end, the researcher hypothesized that there is significant relationship between the five job characteristics and employee innovativeness.

The result of the study (see table 3) shows that all job characteristics except task identity are positively and significantly related to employee innovativeness. Feedback plays the most important role in employee innovativeness with (=0.376, P < 0.001, significant) followed by skill variety (=0.324, P < 0.001, significant). Autonomy and Task significance have a similar impact on employee innovativeness (=0.234 P < 0.001 and =0.250 P < 0.001, respectively). On the contrary, P-value (i.e. 0.699) and the bootstrap interval (i.e. -0.1020.166) lies in between negative and positive values that mean incorporated zero implies that Task Identity is not significant to affect the employee innovativeness. Therefore, Hypothesis H1, H2, H4, and H5 are accepted and H3 is rejected.

<p style="text-align:center">Table 3: Relationship Between Job Characteristics And Employee Innovativeness</p>

Hypothesis	**Path**		**P Value**	**Lower 5 %**	**Upper 95 %**
H1	Skill Variety ---> Innovation	0.324	***	0.210	0.422
H2	Task Significance --->Innovation	0.250	0.001	0.170	0.327
H3	Task Identity ---> Innovation	0.026	0.699	-0.102	0.166
H4	Autonomy ---> Innovation	0.234	***	0.106	0.352
H5	Feedback ---> Innovation	0.376	***	0.263	0.471

Industry Ownership and Innovativeness

An independent sample t-test was conducted to compare employee innovativeness against industrys' ownership fromprivate (n = 172)and public(n = 284).As can be observed fro table 6, the test revealed that there was significant difference in innovativeness between private owned (M=2.62, SD =0.489) and public owned (M=2.40, SD =0.536)industries, t(455) = 4.41, P < 0.00. Moreover,homogeneity of variance was tested using Levene's F test F(454) = 3.13, P = 0.078, p is not significant to reject equal variances between groups, so equal variance is assumed. Private and public employee innovativeness data is adequately normal to conduct the independent samplet-test i.e. (skewness = -0.747)and (kurtosis= 0.144) ranged between 2.49 and 2.33 and 1.92 and 7.41 respectively; (Blanca, Arnau, López-Montiel, Bono, & Bendayan, 2013).

Table 4: Independent Samples Test

Levene's Test for Equality of Variances		Descriptive		t-test for Equality of Means						
		Mean & (SD) Private	Mean & (SD) Public	T	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of Diff.		
F	Sig.							Lower	Upper	
Equal variances assumed Equal variances not assumed										
3.13	0.078	2.62 (0.489)	2.40 (0.536)	4.41 4.52	454 387	0.000 0.000	0.221 0.221	0.123 0.125	0.32 0.318	

DISCUSSIONS

Manufacturing industries in developing countries failed to succeed in the market mainly due to their incapability to compete with the imported quality and innovative products from abroad. Managers and policymakers are always attentive to the issue. However, important Employee innovative factors such as job characteristics as mentioned by Hammond, Neff, Farr, Schwall, and Zhao (2011) are lacking attention in specific study industries in Ethiopia. Hence, this study has initiated to uncover the importance of job characteristics in relation to employee innovativeness in such industries. The study has been implemented in two major hypotheses, the first hypothesis was to investigate the relationship between job characteristics and employee innovativeness. Results revealed that job characteristics dimensions such as Task variety, Task Identity, Autonomy, and Feedback have a significant positive relationship with innovativeness. Feedback (with =0.292) was found to be the most important determinant of innovativeness followed by skill variety (with =0.243). The results are consistent with previous studies forexample Skill variety positively influences innovativeness (Montani et al., 2014). Task identity leads to higher levels of innovative work behavior(Cerne et al., 2017) autonomy positively associate with innovativeness (Parzefall et al., 2008), and feedback associate with innovative behavior (Hammond et al., 2011). Overall job characteristics interconnected to employee innovative behavior (Coelho & Augusto, 2010; Holman et al., 2011).

The independent-sample t-test has shown a significant difference in innovativeness between privately owned and publicly owned industries. The descriptive statistics were indicated that the mean employee innovativeness of private-owned (i.e.M=2.62) more than that of public-owned (i.e. (M=2.40). Hence, it is safe to conclude that privately-owned industries are more innovative than public-owned one. It is not surprising that private industries are more innovative because as stated by West and Lu (2009) they are customer-oriented and take their visitors' experiences and expertise as feedback for innovativeness. According to Halvorsen et al. (2005), public sectors are less innovative as they are less responsive to market competition.

RECOMMENDATIONS FOR FUTURE STUDY

Findings illustrate that feedback and skill variety, respectively, are the most important determinant of employee innovativeness hence the companies should intently incorporate the two work dimension during job design, however, the reason for the insignificant effect of task significance require future investigation. Furthermore, the reason for the insignificant effect of task significance requires future investigation. Additionally, this study reached out only to Steel, Garment, and Leather industrys' employee innovativeness, further study recommended to address others manufacturing sectors.

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APPENDIX

Table 5: Discriminant Validity

Factors	CR	AVE	MSV	MaxR (H)	Au	FB	Inno.	SV	TS	TI
Au	0.799	0.504	0.309	0.825	**0.710**					
FB	0.789	0.557	0.377	0.809	0.449***	**0.747**				
Inno.	0.847	0.484	0.272	0.867	0.521***	0.493***	**0.696**			
SV	0.818	0.530	0.271	0.823	0.521***	0.310***	0.486***	**0.728**		
TS	0.756	0.517	0.080	0.796	0.193**	0.087	0.283***	0.096†	**0.719**	
TI	0.754	0.507	0.377	0.766	0.556	0.614	0.481	0.512	0.063	**0.712**

SV= Skill Variety, TS = Task Significance, TI = Task Identity, Au = Autonomy, FB= Feedback, Inno. = Innovativeness

Table 6: HTMT Analysis

	Autonomy	**Feedback**	**Innovation**	**SkillVar**	**TaskSign**	**TaskIdentity**
Autonomy						
Feedback	0.455					
Innovation	0.571	0.506				
SkillVar	0.561	0.339	0.499			
TaskSign	0.277	0.081	0.315	0.140		
TaskIdentity	0.596	0.650	0.540	0.557	0.081	

Significance of Correlations:

† p < 0.100

* p < 0.050

** p < 0.010

*** p < 0.001